



# CRITICAL REAGENTS PROGRAM FACT SHEET

Certified ISO 9001 Organization

## ABOUT THE CRP

As a national resource for the biological defense community, the CRP serves as the principal resource of high quality, validated, and standardized biological reference materials, reagents, and assays that meet the technology-development and sustainment needs of the Department of Defense and its partners. The CRP also supports the biological defense community's mission by facilitating the transition of new technologies and coordinating their advanced development, efficient production and timely distribution.

The CRP product portfolio includes antibodies, inactivated antigens, genomic materials, Electrochemiluminescence (ECL) assays, Polymerase Chain Reaction (PCR) assays, Lateral Flow Immunoassays (LFIs), and Biological Sampling Kits.

## CONTACT INFORMATION

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## COMMODITY MANAGER

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## Electrochemiluminescence (ECL) Assay

### Description

An Electrochemiluminescence (ECL) assay is an antibody-based test designed to detect the presence of a biological threat agent. In an ECL assay, the presence of an agent of interest creates a complex with two antibodies: one antibody is attached to a magnetic particle, the other antibody (in solution) is modified with a reporter molecule. In the M1M instrument, the antigen/antibody complex is exposed to an electrode, which simultaneously attracts the magnetic bead and stimulates the detection molecule to emit light. The measurement of light is correlated with the presence of the specific antigen.

### Production

CRP ECL assays are produced in accordance with rigorous quality assurance (QA) and quality control (QC) measures. A schematic of the process is detailed below.

### ECL Production



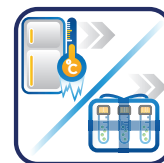
Antibodies are sent to the ECL manufacturer



ECL assays are formulated, lyophilized and sent for conformance testing



Upon positive testing results, lots are released to the CRP



Products are stored or shipped to customers

### Technology Applications

The ECL technology allows for the specific detection of various biological threat agents by antibodies specific for the molecule or organism of interest. Antibody-based detection technologies such as the ECL detect the presence of proteins, rather than genomic material as in the polymerase chain reaction. As a result, ECL and other antibody-based technologies are often complementary to genetic-based detection methods. Generally, an ECL assay is concentration sensitive, creating a more intense signal with an increasing concentration of agent. However, the ECL technology is typically not used for quantitative applications.

### Catalog Offerings

The CRP Catalog contains 10 ECL assays that are compatible with the BioVeris M1M Analyzer, and are available for purchase by Government customers. To place orders online, please visit OSCAR – the Ordering System CRP Assays and Reagents – at <https://pki.jacks.jpeocbd.army.mil/crp/default.aspx>. For more information on how to register for a user account and view OSCAR tutorials, please visit the CRP's website at: <http://www.jpeocbd.osd.mil/packs/Default.aspx?pg=1205>.